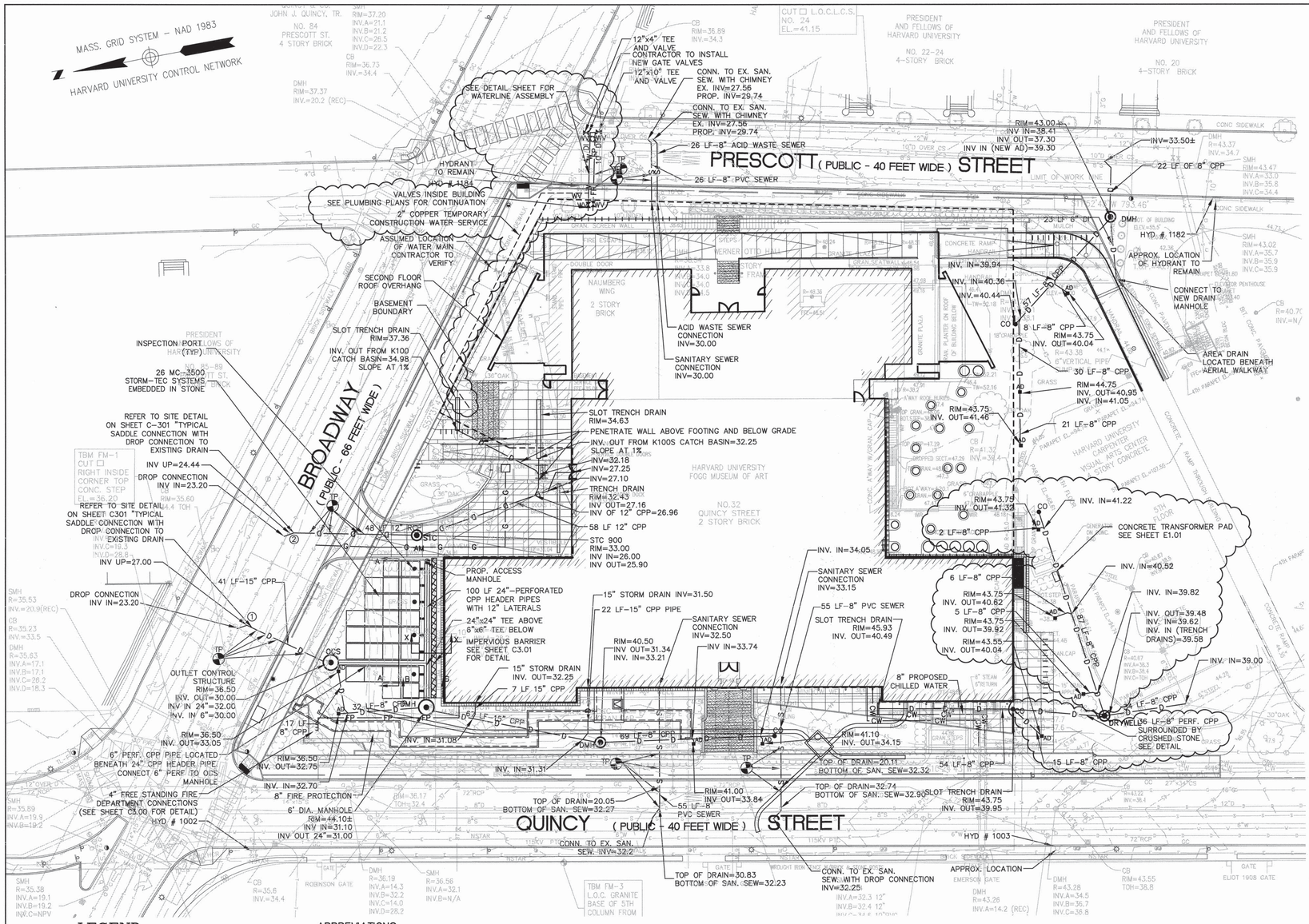
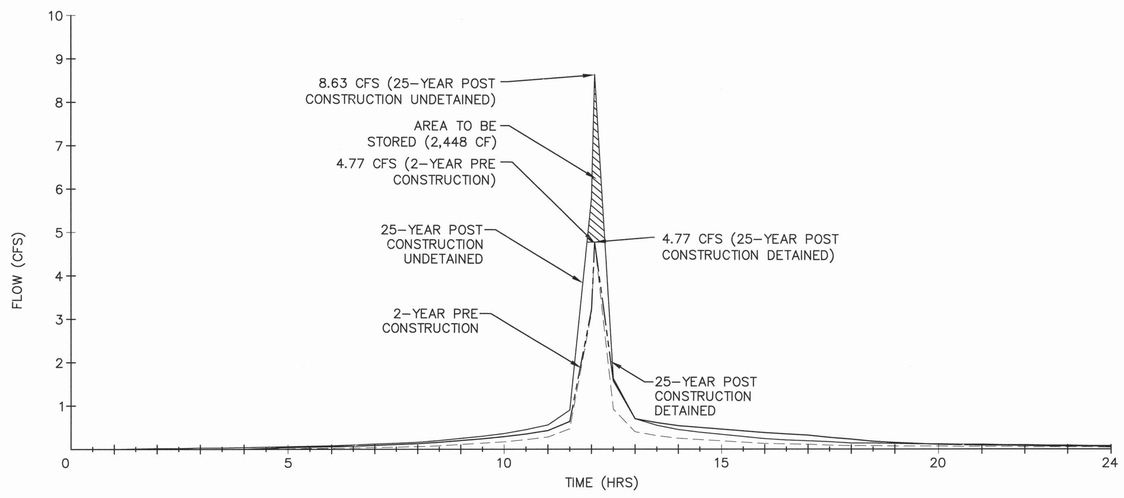

MASS. GRID SYSTEM – NAD 1983
HARVARD UNIVERSITY CONTROL NETWORK
PRESCOTT (PUBLIC - 40 FEET WIDE) STREET
BROADWAY (PUBLIC - 66 FEET WIDE)
QUINCY (PUBLIC - 40 FEET WIDE) STREET
HARVARD UNIVERSITY FOGG MUSEUM OF ART
NO.32 QUINCY STREET 2 STORY BRICK
PRESIDENT AND FELLOWS OF HARVARD UNIVERSITY
NO. 84 PRESCOTT ST. 4 STORY BRICK
NO. 22-24 4-STORY BRICK
NO. 20 4-STORY BRICK
NAUMBERG WING 2 STORY BRICK
HARVARD UNIVERSITY CARPENTER CENTER FOR THE VISUAL ARTS 6 STORY CONCRETE
12"x4" TEE AND VALVE CONTRACTOR TO INSTALL NEW GATE VALVES
12"x10" TEE AND VALVE
CONN. TO EX. SAN. SEW. WITH CHIMNEY EX. INV=27.56 PROP. INV=29.74
CONN. TO EX. SAN. SEW. WITH CHIMNEY EX. INV=27.56 PROP. INV=29.74
26 LF–8" ACID WASTE SEWER
26 LF–8" PVC SEWER
SEE DETAIL SHEET FOR WATERLINE ASSEMBLY
HYDRANT TO REMAIN
HYD # 1184
VALVES INSIDE BUILDING SEE PLUMBING PLANS FOR CONTINUATION
2" COPPER TEMPORARY CONSTRUCTION WATER SERVICE
ASSUMED LOCATION OF WATER MAIN CONTRACTOR TO VERIFY
SECOND FLOOR ROOF OVERHANG
BASEMENT BOUNDARY
SLOT TRENCH DRAIN RIM=37.36
INV. OUT FROM K100 CATCH BASIN=34.98 SLOPE AT 1%
26 MC–3500 STORM–TEC SYSTEMS EMBEDDED IN STONE
ACID WASTE SEWER CONNECTION INV=30.00
SANITARY SEWER CONNECTION INV=30.00
SLOT TRENCH DRAIN RIM=34.63
PENETRATE WALL ABOVE FOOTING AND BELOW GRADE
INV. OUT FROM K100S CATCH BASIN=32.25 SLOPE AT 1%
INV=32.18
INV=27.25
INV=27.10
TRENCH DRAIN RIM=32.43
INV OUT=27.16
INV OF 12" CPP=26.96
58 LF 12" CPP
STC 900 RIM=33.00 INV IN=26.00 INV OUT=25.90
REFER TO SITE DETAIL ON SHEET C–301 "TYPICAL SADDLE CONNECTION WITH DROP CONNECTION TO EXISTING DRAIN
INV UP=24.44
DROP CONNECTION INV IN=23.20
REFER TO SITE DETAIL ON SHEET C301 "TYPICAL SADDLE CONNECTION WITH DROP CONNECTION TO EXISTING DRAIN
INV UP=27.00
41 LF–15" CPP
DROP CONNECTION INV IN=23.20
OUTLET CONTROL STRUCTURE RIM=36.50 INV. OUT=30.00 INV IN 24"=32.00 INV. IN 6"=30.00
PROP. ACCESS MANHOLE
100 LF 24"–PERFORATED CPP HEADER PIPES WITH 12" LATERALS
24"x24" TEE ABOVE 6"x6" TEE BELOW
IMPERVIOUS BARRIER SEE SHEET C3.01 FOR DETAIL
15" STORM DRAIN INV. OUT=32.25
7 LF 15" CPP
22 LF–15" CPP PIPE
15" STORM DRAIN INV=31.50
SANITARY SEWER CONNECTION INV=32.50
INV IN=33.74
RIM=40.50 INV OUT=31.34 INV. IN=33.21
17 LF 8" CPP
RIM=36.50 INV. OUT=33.05
6" PERF. CPP PIPE LOCATED BENEATH 24" CPP HEADER PIPE, CONNECT 6" PERF TO OCS MANHOLE
RIM=36.50 INV. OUT=32.75
INV. IN=31.08
INV. IN=31.31
4" FREE STANDING FIRE DEPARTMENT CONNECTIONS (SEE SHEET C3.00 FOR DETAIL) HYD # 1002
INV. IN=32.70
8" FIRE PROTECTION
6' DIA. MANHOLE RIM=44.10± INV IN=31.10 INV OUT 24"=31.00
69 LF–8" CPP
RIM=41.10 INV. OUT=34.15
TOP OF DRAIN=20.11 BOTTOM OF SAN. SEW=32.32
54 LF–8" CPP
15 LF–8" CPP
TOP OF DRAIN=32.74 BOTTOM OF SAN. SEW=32.90
SLOT TRENCH DRAIN RIM=43.75 INV. OUT=39.95
RIM=41.00 INV OUT=33.84
55 LF–8" PVC SEWER
TOP OF DRAIN=20.05 BOTTOM OF SAN. SEW=32.27
TOP OF DRAIN=30.83 BOTTOM OF SAN. SEW=32.23
CONN. TO EX. SAN. SEW. INV=32.2
CONN. TO EX. SAN. SEW. WITH DROP CONNECTION INV=32.25
APPROX. LOCATION
HYD # 1003
TBM FM–3 L.O.C. GRANITE BASE OF STH COLUMN FROM
TBM FM–1 CUT □ RIGHT INSIDE CORNER TOP CONC. STEP
CUT □ L.O.C.L.C.S. NO. 24 EL.=41.15
RIM=43.00 INV IN=38.41 INV OUT=37.30 INV IN (NEW AD)=39.30
22 LF OF 8" CPP
INV=33.50±
23 LF 6" DI
DMH HYD # 1182
APPROX. LOCATION OF HYDRANT TO REMAIN
CONNECT TO NEW DRAIN MANHOLE
AREA DRAIN LOCATED BENEATH AERIAL WALKWAY
8 LF–8" CPP RIM=43.75 INV. OUT=40.04
30 LF–8" CPP RIM=44.75 INV. OUT=40.95 INV. IN=41.05
21 LF–8" CPP
RIM=43.75 INV. OUT=41.46
RIM=43.79 INV. OUT=41.32
2 LF–8" CPP
INV. IN=41.22
CONCRETE TRANSFORMER PAD SEE SHEET E1.01
INV. IN=34.05
SANITARY SEWER CONNECTION INV=33.15
55 LF–8" PVC SEWER
SLOT TRENCH DRAIN RIM=45.93 INV. OUT=40.49
6 LF–8" CPP
RIM=43.75 INV. OUT=40.62
5 LF–8" CPP
RIM=43.75 INV. OUT=39.92
RIM=43.55 INV. OUT=40.04
INV. IN=40.52
INV. IN=39.82
INV. OUT=39.48
INV. IN=39.62
INV. IN (TRENCH DRAINS)=39.58
INV. IN=39.00
8" PROPOSED CHILLED WATER
34 LF–8" CPP
DRYWELL 36 LF–8" PERF. CPP SURROUNDED BY CRUSHED STONE SEE DETAIL
INV. IN=31.05
INV. IN=40.36
INV.=40.44
INV. IN=39.94
RIM=43.00 INV IN=38.41 INV OUT=37.30 INV IN (NEW AD)=39.30
RIM=43.02 INV.A=35.7 INV.B=35.9 INV.C=35.9
RIM=43.47 INV.A=33.0 INV.B=35.8 INV.C=34.4
RIM=43.37 INV.=34.7
RIM=40.70 INV.=N/
RIM=36.89 INV.=34.3
RIM=37.20 INV.A=21.1 INV.B=21.2 INV.C=26.5 INV.D=22.3
RIM=36.73 INV.=34.4
RIM=37.37 INV.=20.2 (REC)
RIM=35.53 INV.=20.9(REC)
RIM=35.23 INV.=33.5
RIM=35.83 INV.A=17.1 INV.B=17.1 INV.C=26.2 INV.D=18.3
RIM=35.89 INV.A=19.9 INV.B=19.2
RIM=35.38 INV.A=19.1 INV.B=19.2 INV.C=NPV
RIM=36.19 INV.A=14.3 INV.B=32.2 INV.C=14.0 INV.D=28.2
RIM=36.56 INV.A=32.1 INV.B=N/A
RIM=35.6 INV.=34.4
RIM=43.55 TOH=38.8
RIM=43.28 INV.A=34.5 INV.B=36.7 INV.C=38.8
DMH RIM=43.26 INV.A=14.2 (REC)

LEGEND

- DMH — DRAIN MANHOLE
- AD — AREA DRAIN
- CB — CATCH BASIN
- CO — CLEANOUT
- SMH — SEWER MANHOLE
- EMH — ELECTRIC MANHOLE
- TMH — TELEPHONE MANHOLE
- UP — UTILITY POLE
- LP — STREET LIGHT POLE
- EHH — ELECTRIC HANDHOLE
- GG — GAS GATE
- WV — WATER VALVE
- STC — STORMCEPTOR UNIT
- OCS — OUTLET CONTROL STRUCTURE
- ABANDON UTILITY LINE
- C — CABLE TELEVISION LINE
- D — DRAIN LINE
- E — UNDERGROUND ELECTRIC LINE
- FP — FIRE PROTECTION LINE
- G — GAS LINE
- S — SEWER LINE
- T — TELEPHONE/DATA LINE
- W — WATER LINE
- OHW — OVERHEAD WIRES
- TS — TRAFFIC SIGNAL LINE
- EDGE OF TREES
- X — CHAIN LINK FENCE
- STONE WALL
- CUT & CAP UTILITY LINE
- TW 147.50 BW 137.50 — TOP OF WALL ELEVATION / BOTTOM OF WALL ELEVATION
- +148.55 — SPOT ELEVATION
- TP — TEST BORING
- TEST PIT LOCATION
- 1 — DROP CONNECTION NUMBER (SEE SHEET C3.01)
- RCP — REINFORCED CONCRETE PIPE

ABBREVIATIONS

AD	AREA DRAIN
BC	BOTTOM OF CURB
BG	BOTTOM OF STEEL GIRDER
BLDG.	BUILDING
BW	BOTTOM OF WALL
BWW	BOSTON WATER WORKS GATE
CATV	CABLE TELEVISION
CB	CATCH BASIN
CI	CAST IRON PIPE
CLDI	CEMENT LINE DUCTILE IRON PIPE
CLF	CHAIN LINK FENCE
CMP	CORRUGATED METAL PIPE
CONC.	CONCRETE
CPP	CORROGATED PLASTIC PIPE
CSMH	COMBINED SEWER MANHOLE
DIP	DUCTILE IRON PIPE
DMH	DRAINAGE MANHOLE
EHH	ELECTRIC HANDHOLE
EMH	ELECTRIC MANHOLE
FS	FIRE SERVICE
GG	GAS GATE
GV	GAS VALVE
HP	HORSEPOWER
HYD	HYDRANT
I	INVERT ELEVATION
LF	LINEAR FEET
LOC.	LOCATION
LP	STREET LIGHT POLE
OHW	OVERHEAD WIRE
PVC	POLYVINYL CHLORIDE PIPE
R	RIM ELEVATION
RCP	REINFORCED CONCRETE PIPE
REC.	RECORD
SH	SPRINKLER HEAD
SMH	SEWER MANHOLE
TC	TOP OF CURB
TG	TOP OF STEEL GIRDER
TMH	TELEPHONE MANHOLE
TR	TOP OF RAIL ELEVATION
TW	TOP OF WALL
TYP.	TYPICAL
UP	UTILITY POLE
VCP	VETRIFIED CLAY PIPE
WG	WATER GATE
WV	WATER VALVE
W/	WITH
W/O	WITHOUT



HARVARD ART MUSEUM UNIT HYDROGRAPH

SCALE: 1" = 20'

20 10 0 20 40

GENERAL NOTES

1. TOPOGRAPHIC DATA, PROPERTY LINE INFORMATION, AND EXISTING SITE FEATURES WERE OBTAINED FROM A PLAN ENTITLED "EXISTING CONDITION PLAN", PREPARED BY CHAS H. SELLS INC., DATED MARCH 12, 2007.
2. THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY UTILITY CONNECTIONS OR CROSSINGS OF PROPOSED UTILITIES AND EXISTING UTILITIES. THE CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES RELATIVE TO THE LOCATIONS AND ELEVATIONS OF THEIR LINES. THE CONTRACTOR SHALL KEEP A RECORD OF ANY DISCREPANCIES OR CHANGES IN THE LOCATIONS OF ANY UTILITIES SHOWN OR ENCOUNTERED DURING CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO NITSCH ENGINEERING.
3. THE CONTRACTOR SHALL COMPLY WITH MASSACHUSETTS GENERAL LAWS CHAPTER 82, SECTION 40, AS AMENDED, WHICH STATES THAT NO ONE MAY EXCAVATE IN THE COMMONWEALTH OF MASSACHUSETTS EXCEPT IN AN EMERGENCY WITHOUT 72 HOURS NOTICE, EXCLUSIVE OF SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS, TO NATURAL GAS PIPELINE COMPANIES, AND MUNICIPAL UTILITY DEPARTMENTS THAT SUPPLY GAS, ELECTRICITY, TELEPHONE, OR CABLE TELEVISION SERVICE IN OR TO THE CITY OR TOWN WHERE THE EXCAVATION IS TO BE MADE. THE CONTRACTOR SHALL CALL "DIG SAFE" AT 1–888–DIG–SAFE.
4. ALL UTILITY CONNECTIONS ARE SUBJECT TO THE APPROVAL OF, AND GRANTING OF PERMITS BY, THE CITY OF CAMBRIDGE. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO SEE THAT ALL PERMITS AND APPROVALS ARE OBTAINED BEFORE STARTING CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAKING ALL NECESSARY ARRANGEMENTS FOR AND FOR PERFORMING ANY NECESSARY WORK INVOLVED IN CONNECTION WITH THE DISCONTINUANCE OF ANY UTILITIES WITHIN THE JURISDICTION OF ANY UTILITY COMPANIES, SUCH AS ELECTRICITY, TELEPHONE, WATER, GAS, AND ANY SYSTEM OR SYSTEMS WHICH WILL BE AFFECTED BY THE WORK TO BE PERFORMED UNDER THIS CONTRACT. THE CONTRACTOR SHALL NOTIFY ALL APPROPRIATE AGENCIES, DEPARTMENTS, AND UTILITY COMPANIES, IN WRITING, AT LEAST 48 HOURS AND NOT MORE THAN 30 DAYS PRIOR TO ANY CONSTRUCTION. CONSTRUCTION SHALL NOT INTERFERE WITH OR INTERRUPT UTILITIES WHICH ARE TO REMAIN IN OPERATION.
5. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES, REGULATIONS AND SAFETY CODES IN THE CONSTRUCTION OF ALL IMPROVEMENTS.
6. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT ALL WALKS, GRADING, SIDEWALKS AND SITE DETAILS OUTSIDE OF THE LIMITS OF REGRADING AND WORK AS SHOWN ON THE DRAWINGS AND SHALL REPAIR AND REPLACE OR OTHERWISE MAKE GOOD AS DIRECTED BY THE ENGINEER OR OWNER'S DESIGNATED REPRESENTATIVE ANY SUCH OR OTHER DAMAGE SO CAUSED.
7. THE CONTRACTOR SHALL REMOVE FROM THE SITE ALL RUBBISH AND DEBRIS FOUND THEREON. STORAGE OF SUCH MATERIALS ON THE PROJECT SITE WILL NOT BE PERMITTED. THE CONTRACTOR SHALL LEAVE THE SITE IN SAFE, CLEAN, AND LEVEL CONDITION UPON COMPLETION OF THE SITE CLEARANCE WORK.
8. THE CONTRACTOR SHALL REMOVE FROM THE AREA OF CONSTRUCTION PAVEMENT, CONCRETE, GRANITE CURBING, CEMENT CURBING, POLES AND FOUNDATIONS, ISLANDS, TREE BERMS AND OTHER FEATURES WITHIN THE LIMITS OF CONSTRUCTION AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION WHETHER SPECIFIED ON THE DRAWINGS OR NOT.
9. FOR SITE LAYOUT, GRADING, MATERIALS, PLANTINGS, GROUND COVER, EROSION CONTROL, AND DETAILS SEE LANDSCAPE ARCHITECT'S DRAWINGS.
10. FOR STRUCTURAL DETAILS AND INFORMATION SEE STRUCTURAL DRAWINGS.
11. ALL WATER, SEWER, AND DRAIN WORK SHALL BE PERFORMED ACCORDING TO THE REQUIREMENTS AND STANDARD SPECIFICATIONS OF THE CITY OF CAMBRIDGE.
12. ELEVATIONS REFER TO CAMBRIDGE CITY DATUM.
13. GAS, TELEPHONE AND ELECTRIC SERVICES ARE TO BE DESIGNED BY EACH UTILITY COMPANY IN COORDINATION WITH THE MECHANICAL, ELECTRIC AND PLUMBING CONSULTANTS. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES AND DESIGN OF NEW UTILITIES WITH ELECTRIC, CABLE TELEVISION AND TELECOMMUNICATION UTILITIES.
14. INSTALL WATER LINES WITH A MINIMUM OF FIVE FEET OF COVER AND A MAXIMUM OF SEVEN FEET.
15. MAINTAIN 10 FEET HORIZONTAL SEPARATION AND 18" VERTICAL SEPARATION (WATER OVER SEWER) BETWEEN SEWER AND WATER LINES. WHEREVER THERE IS LESS THAN 10 FEET OF HORIZONTAL SEPARATION AND 18" OF VERTICAL SEPARATION BETWEEN A PROPOSED OR EXISTING SEWER LINE TO REMAIN AND A PROPOSED OR EXISTING WATER LINE TO REMAIN BOTH WATER MAIN AND SEWER MAIN SHALL BE CONSTRUCTED OF MECHANICAL JOINT CEMENT LINED DUCTILE IRON PIPE FOR A DISTANCE OF 10–FEET ON EITHER SIDE OF THE CROSSING. ONE (1) FULL LENGTH OF WATER PIPE SHALL BE CENTERED OVER THE SEWER AT THE CROSSING.
16. UTILITY STRUCTURES TO BE ABANDONED SHALL BE REMOVED TO A DEPTH OF NO LESS THAN 3 FEET BELOW FINISHED GRADE, THE BOTTOMS OF THE STRUCTURES SHALL BE BROKEN AND THE STRUCTURES SHALL BE BACKFILLED WITH GRAVEL BORROW AND COMPACTED.
17. CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES EXCEPT THOSE NOTED TO BE ABANDONED OR REMOVED & DISPOSED.
18. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR TRENCHING, BACKFILLING, AND SURFACE RESTORATION FOR THE GAS LINE INSTALLATION.
19. FOR SOIL INFORMATION REFER TO GEOTECHNICAL REPORT.
20. ALL GRATES IN WALKWAYS SHALL BE ADA COMPLIANT.
21. CONTRACTOR SHALL REPORT ALL TEST PIT INFORMATION TO CIVIL ENGINEER FOR UTILITY COORDINATION.
22. THE CONTRACTOR SHALL COMPLY WITH MASSACHUSETTS GENERAL LAWS CHAPTER 82A, ALSO REFERRED TO AS JACKIE'S LAW, AS DETAILED IN SECTION 520 CMR 14.00 OF THE CODE OF MASSACHUSETTS REGULATIONS.
23. IN AREAS WHERE TEST PITS ARE INDICATED, THE CONTRACTOR SHALL EXCAVATE THE ROUTE OF THE PROPOSED UTILITY IN ITS ENTIRITY. THE CONTRACTOR SHALL CLEARLY DOCUMENT THE LOCATIONS AND ELEVATIONS OF THE EXISTING UTILITIES. IF THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES PRECLUDES THE INSTALLATION OF THE PROPOSED UTILITIES AS DESIGNED, THE CONTRACTOR SHALL CONTACT NITSCH ENGINEERING IMMEDIATELY.

HARVARD UNIVERSITY

ALLSTON DEVELOPMENT GROUP

Holyoke Center, Suite 912
1350 Massachusetts Avenue
Cambridge, MA 02138
tel: 617.495.2254 fax: 617.495.0550

ARCHITECT (DESIGN):
RPBW
RENZO PIANO BUILDING WORKSHOP
34 Rue des Archives, F-75004 Paris - France

ARCHITECT OF RECORD:
PAYETTE
285 Summer Street
Boston, MA 02210-1522
Tel: 617-895-1000
Fax: 617-895-1002

STRUCTURAL ENGINEER:
ROSENWASSER GILMAN ASSOCIATES
STRUCTURAL ENGINEERS
88 University Place
New York, NY 10003
P 212.620.7970 F 212.620.8157

BUILDING SERVICES ENGINEER:
ARUP
155 Avenue of the Americas
New York NY 10013
Tel (212) 229 2669 Fax (212) 229 1056

Nitsch Engineering

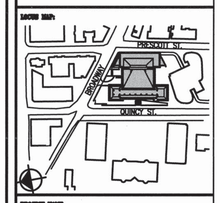
DATE	ISSUANCE
03/01/2010	REV 0– CONTRACT DOCUMENTS
03/08/2010	REV 1– BULLETIN #00004
05/14/2010	REV 2– BULLETIN #00013
06/11/2010	REV 3– BULLETIN #00014
07/20/2010	REV 4– BULLETIN #00024

THIS DRAWING:
"Warning: This document may contain sensitive security information and therefore must be treated as a controlled document. The information contained in this document must be published in a coordinated manner to prevent compromising homeland security as provided in Section 214 of the Homeland Security Act of 2002. No part of this document shall be reproduced, released or published without the express written permission of Harvard University. Unauthorized reproduction, release or distribution may result in civil penalty or other action by Harvard University."

ARCHITECT'S SEAL:

DAVID M. COWAY CIVIL No. 42008 REGISTERED PROFESSIONAL ENGINEER 7/20/10

LOCUS MAP:



PROJECT NAME:

32 QUINCY STREET EXPANSION AND RENOVATION

Harvard Art Museum
32 Quincy St.
Cambridge, MA 02138

Harvard Building No. 455
Project No. 07-001

DRAWING TITLE: SITE UTILITY PLAN

CAD FILE NAME: 6677CUT.DWG

DRAWING SCALE: 1"=20'

DRAWING NUMBER: C2.00